This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. **(Currently Amended)** A composition comprising:

- a radionuclide, excluding ~~I-123, I-125 and I-131~~ iodine radionuclides, optionally as part of a compound or complex,
- a targeting agent, and
- iodide ions or a compound which releases or generates iodide ions,

where the iodide ions aid in stabilizing the composition against degradation thus maintaining high radiochemical purity of the composition, and,

where the targeting agent:

- is a peptide, oligonucleotide, antibody or peptidomimetic, or
- is a targeting agent bonded to a complexing moiety, of the following formula:

$$A—CZ(B)—[C(R^1R^2)]_n—X$$

wherein A is H, HOOC, H_2NOC, (peptide, oligonucleotide, or antibody ~~or small organic compound~~)-NHOC, (peptide, oligonucleotide, or antibody ~~or small organic compound~~)-OOC or R^4; B is H, SH or —NHR^3, —$N(R^3)$-(peptide, oligonucleotide, antibody or small organic compound) or R^4; X is SH or —NHR^3, —$N(R^3)$-(peptide, oligonucleotide, or antibody ~~or small organic compound~~) or R^4; R^1, R^2, R^3 and R^4 are independently H or straight or branched chain or cyclic lower alkyl; n is 0, 1 or 2; and, Z is H, SH or R^4; provided that: (a) where B is —NHR^3 or —$N(R^3)$-(peptide, oligonucleotide, or antibody ~~or small organic compound~~), X is SH and n is 1 or 2; (b) where X is —NHR^3 or —$N(R^3)$-(peptide, oligonucleotide, or antibody ~~or small organic compound~~), B is SH and n is 1 or 2; (c) where B is H or R^4, A is HOOC, H_2NOC, (peptide, oligonucleotide, or antibody ~~or small organic compound~~)-NHOC, (peptide, oligonucleotide, or antibody ~~or small organic compound~~)-OOC,

X is SH and n is 0 or 1; (d) where A is H or R^4, then, where B is SH, X is —NHR^3 or —$N(R^3)$-(peptide, oligonucleotide, or antibody ~~or small organic compound~~) and where X is SH, B is —NHR^3 or —$N(R^3)$-(peptide, oligonucleotide, or antibody ~~or small organic compound~~); (e) where X is H or R^4, A is HOOC, H_2NOC, (peptide, oligonucleotide, or antibody ~~or small organic compound~~)-NHOC, (peptide, oligonucleotide, or antibody ~~or small organic compound~~)-OOC and B is SH; (f) where Z is methyl, X is methyl, A is HOOC, H_2NOC, (peptide, oligonucleotide, or antibody ~~or small organic compound~~)-NHOC, (peptide, oligonucleotide, or antibody ~~or small organic compound~~)-OOC and B is SH and n is 0; and (g) where Z is SH and X is SH, n is not 0; and wherein the thiol moiety is in the reduced form and the complexing group is capable of being covalently linked to the peptide, oligonucleotide, or antibody ~~or small organic compound~~.

2. (Original) The composition of claim 1, wherein the iodide ions are provided by an iodide salt in the composition.

3. (Original) The composition of claim 1, wherein the iodide ions are provided by an alkali metal iodide salt in the composition.

4. (Original) The composition of claim 1, wherein the radionuclide is associated with a targeting agent.

5. (Canceled)

6. **(Original)** The composition of claim 4, wherein the targeting agent is associated with the radionuclide by being bonded to a complexing moiety which complexes the radionuclide.

7. **(Withdrawn) (Currently Amended)** The composition of claim 6, wherein the targeting agent is a targeting agent bonded to a complexing moiety, of the following formula:

$$A—CZ(B)—[C(R^1R^2)]_n—X$$

wherein A is H, HOOC, H_2NOC, (peptide, oligonucleotide, or antibody ~~or small organic compound~~)-NHOC, (peptide, oligonucleotide, or antibody ~~or small organic compound~~)-OOC or R^4; B is H, SH or —NHR^3, —$N(R^3)$-(peptide, oligonucleotide, or antibody ~~or small organic compound~~) or R^4; X is SH or —NHR^3, —$N(R^3)$-(peptide, oligonucleotide, or antibody ~~or small organic compound~~) or R^4; R^1, R^2, R^3 and R^4 are independently H or straight or branched chain or cyclic lower alkyl; n is 0, 1 or 2; and, Z is H, SH or R^4; provided that: (a) where B is —NHR^3 or —$N(R^3)$-(peptide, oligonucleotide, or antibody ~~or small organic compound~~), X is SH and n is 1 or 2; (b) where X is —NHR^3 or —$N(R^3)$-(peptide, oligonucleotide, or antibody ~~or small organic compound~~), B is SH and n is 1 or 2; (c) where B is H or R^4, A is HOOC, H_2NOC, (peptide, oligonucleotide, or antibody ~~or small organic compound~~)-NHOC, (peptide, oligonucleotide, or antibody ~~or small organic compound~~)-OOC, X is SH and n is 0 or 1; (d) where A is H or R^4, then, where B is SH, X is —NHR^3 or —$N(R^3)$-(peptide, oligonucleotide, or antibody ~~or small organic compound~~) and where X is SH, B is —NHR^3 or —$N(R^3)$-(peptide, oligonucleotide, or antibody ~~or small organic compound~~); (e) where X is H or R^4, A is HOOC, H_2NOC, (peptide, oligonucleotide, or antibody ~~or small organic compound~~)-NHOC, (peptide, oligonucleotide, or antibody ~~or small organic compound~~)-OOC and B is SH; (f) where Z is methyl, X is methyl, A is HOOC, H_2NOC,

(peptide, oligonucleotide, or antibody ~~or small organic compound~~)-NHOC, (peptide, oligonucleotide, or antibody ~~or small organic compound~~)-OOC and B is SH and n is 0; and (g) where Z is SH and X is SH, n is not 0; and wherein the thiol moiety is in the reduced form and the complexing group is capable of being covalently linked to the peptide, oligonucleotide, or antibody ~~or small organic compound~~.

8. (Currently Amended) The composition of claim ~~5~~ 4, wherein the targeting agent is a somatostatin receptor binding peptide.

9. (Original) The composition of claim 8, wherein the somatostatin receptor binding peptide is depreotide or P2045.

10. (Original) The composition of claim 1, wherein the radionuclide is Tc-99m.

11. (Currently Amended) A method for stabilizing a composition comprising:

- a radionuclide, excluding ~~I-123, I-125 and I-131~~ iodine radionuclides, optionally as part of a compound or complex, and
- a targeting agent which:
  - is a peptide, oligonucleotide, antibody or peptidomimetic, or
  - is a targeting agent bonded to a complexing moiety, of the following formula:

$$A—CZ(B)—[C(R^1R^2)]_n—X$$

wherein A is H, HOOC, H_2NOC, (peptide, oligonucleotide, or antibody ~~or small organic compound~~)-NHOC, (peptide, oligonucleotide, or antibody ~~or small organic compound~~)-OOC or R^4; B is H, SH or —NHR^3, —$N(R^3)$-(peptide, oligonucleotide, or antibody ~~or small organic compound~~) or R^4; X is SH or —NHR^3, —$N(R^3)$-(peptide, oligonucleotide, or antibody ~~or small organic compound~~) or R^4; R^1, R^2, R^3 and R^4 are independently H or straight or branched chain or cyclic lower alkyl; n is 0, 1 or 2; and, Z is H, SH or R^4; provided that: (a) where B is —NHR^3 or —$N(R^3)$-(peptide, oligonucleotide, or antibody ~~or small organic compound~~), X is SH and n is 1 or 2; (b) where X is —NHR^3 or —$N(R^3)$-(peptide, oligonucleotide, or antibody ~~or small organic compound~~), B is SH and n is 1 or 2; (c) where B is H or R^4, A is HOOC, H_2NOC, (peptide, oligonucleotide, or antibody ~~or small organic compound~~)-NHOC, (peptide, oligonucleotide, or antibody ~~or small organic compound~~)-OOC, X is SH and n is 0 or 1; (d) where A is H or R^4, then, where B is SH, X is —NHR^3 or —$N(R^3)$-(peptide, oligonucleotide, or antibody ~~or small organic compound~~) and where X is SH, B is —NHR^3 or —$N(R^3)$-(peptide, oligonucleotide, or antibody ~~or small organic compound~~); (e) where X is H or R^4, A is HOOC, H_2NOC, (peptide, oligonucleotide, or antibody ~~or small organic compound~~)-NHOC, (peptide, oligonucleotide, or antibody ~~or small org anic compound~~)-OOC and B is SH; (f) where Z is methyl, X is methyl, A is HOOC, H_2NOC, (peptide, oligonucleotide, or antibody ~~or small organic compound~~)-NHOC, (peptide, oligonucleotide, or antibody ~~or small organic compound~~)-OOC and B is SH and n is 0; and (g) where Z is SH and X is SH, n is not 0; and wherein the thiol moiety is in the reduced form and the complexing group is capable of being covalently linked to the peptide, oligonucleotide, or antibody ~~or small organic compound~~,

to ~~prevent or~~ lessen the occurrence of the radionuclide degrading, the method comprising providing iodide ions in the composition.

12. (Original) The method of claim 11, wherein the iodide ions are provided by an iodide salt in the composition.

13. (Original) The method of claim 11, wherein the iodide ions are provided by an alkali metal iodide salt in the composition.

14. (Original) The method of claim 11, wherein the radionuclide is associated with a targeting agent.

15. (Canceled)

16. (Original) The method of claim 14, wherein the targeting agent is associated with the radionuclide by being bonded to a complexing moiety which complexes the radionuclide.

17. (Withdrawn) (Currently amended) The method of claim 16, wherein the targeting agent is a targeting agent bonded to a complexing moiety, of the following formula:

$$A—CZ(B)—[C(R^1R^2)]_n—X$$

wherein A is H, HOOC, H_2NOC, (peptide, oligonucleotide, or antibody ~~or small organic compound~~)-NHOC, (peptide, oligonucleotide, or antibody ~~or small organic compound~~)-OOC or R^4; B is H, SH or —NHR^3, —$N(R^3)$-(peptide, oligonucleotide, or antibody ~~or small organic compound~~) or R^4; X is SH or —NHR^3, —$N(R^3)$-(peptide, oligonucleotide, or antibody ~~or small organic compound~~) or R^4; R^1, R^2, R^3 and R^4 are independently H or straight or branched chain or cyclic lower alkyl; n is 0, 1 or 2; and, Z is H, SH or R^4; provided that:

(a) where B is —NHR^3 or —$N(R^3)$-(peptide, oligonucleotide, or antibody ~~or small organic compound~~), X is SH and n is 1 or 2; (b) where X is —NHR^3 or —$N(R^3)$-(peptide, oligonucleotide, or antibody ~~or small organic compound~~), B is SH and n is 1 or 2; (c) where B is H or R^4, A is HOOC, H_2NOC, (peptide, oligonucleotide, or antibody ~~or small organic compound~~)-NHOC, (peptide, oligonucleotide, or antibody ~~or small organic compound~~)-OOC, X is SH and n is 0 or 1; (d) where A is H or R^4, then, where B is SH, X is —NHR^3 or —$N(R^3)$-(peptide, oligonucleotide, or antibody ~~or small organic compound~~) and where X is SH, B is —NHR^3 or —$N(R^3)$-(peptide, oligonucleotide, or antibody ~~or small organic compound~~); (e) where X is H or R^4, A is HOOC, H_2NOC, (peptide, oligonucleotide, or antibody ~~or small organic compound~~)-NHOC, (peptide, oligonucleotide, or antibody ~~or small organic compound~~)-OOC and B is SH; (f) where Z is methyl, X is methyl, A is HOOC, H_2NOC, (peptide, oligonucleotide, or antibody ~~or small organic compound~~)-NHOC, (peptide, oligonucleotide, or antibody ~~or small organic compound~~)-OOC and B is SH and n is 0; and (g) where Z is SH and X is SH, n is not 0; and wherein the thiol moiety is in the reduced form and the complexing group is capable of being covalently linked to the peptide, oligonucleotide, or antibody ~~or small organic compound~~.

18. (Original) The method of claim 14, wherein the targeting agent is a somatostatin receptor binding peptide.

19. (Original) The method of claim 18, wherein the somatostatin receptor binding peptide is depreotide or P2045.

20. (Original) The method of claim 11, wherein the radionuclide is Tc-99m.

21. (Currently Amended) The method of claim ~~15~~ 14, wherein the targeting agent associated with the radionuclide targets at least one tissue in ~~biological system is~~ a mammalian body.

22. (Original) The method of claim 21, further comprising administering the complex to a mammalian body and conducting scintigraphic imaging of the mammalian body.

23. - 31. (Canceled)

32. (Previously presented) A composition comprising:

- a Tc-99m radionuclide, optionally as part of a compound or complex,
- a depreotide or P2045 targeting agent, and
- iodide ions or a compound which releases or generates iodide ions,

where the iodide ions aid in stabilizing the composition against degradation thus maintaining high radiochemical purity of the composition.

33. (Previously presented) The composition of claim 1, wherein the radionuclide is Tc-99m, Re-188, Re-186, Ga-67, In-111, Yb-169, H-3, C-14, N-15, F-18, P-32, P-33 or Y-90.

34. (Previously presented) The method of claim 11, wherein the radionuclide is Tc-99m, Re-188, Re-186, Ga-67, In-111, Yb-169, H-3, C-14, N-15, F-18, P-32, P-33 or Y-90.

35. (Canceled)